

patient-related factors, which not only interact with other themes but also within the same theme. Patient's demographics as well as culture were the most notable factors in terms of interactions with other categories and themes. **CONCLUSIONS:** The intricate network and interactions identified between different themes and within individual themes indicate the complexity of the problem. This framework will enhance the understanding of the complex relation between different barriers and facilitate design of more useful interventions. Future interventions for enhancing adherence should look at the overall factors and target multiple themes of barriers in order to improve patient outcomes.

PDB67

PATIENT COMPLIANCE TO TREATMENT WITH GLICLAZIDE FOR TYPE 2 DIABETES MELLITUS

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OBJECTIVES: Drug treatment tries to improve quality of life, extend life expectancy and diminish disease. Compliance with treatment is a key factor for successful treatment of chronic conditions like diabetes mellitus. Modified-release (MR) gliclazide has a more attractive pharmacological profile compared to conventional-release (CR) gliclazide for the patient. The aim of this study was to review the trials that compared the effects of MR gliclazide with the CR gliclazide from compliance point of view. **METHODS:** Medline, EMBASE, the Cochrane Library, Google scholar were studied for a period of 6 months. The obtained data was compared on the effect from the treatment, compliance of the patients and quality of life improved. **RESULTS:** A total of 14 trials (n=1,044) were included. The gliclazide MR and CR formulations are proven equally safe and efficacious (100%). Mean plasma glucose levels are significantly reduced over a 24-hour period in patients with type 2 diabetes mellitus treated with gliclazide MR once daily, in both fasting and postprandial states. Despite their pharmacologically different release profiles, gliclazide MR and CR are therapeutically equivalent (79%). There are no many evidences on the benefits of MR gliclazide over CR gliclazide mainly because of the small sample size of the trials and lack of long-term morbidity and mortality data (14%). The results on comparison of MR to CR gliclazide concerning compliance is limited. However data indicate that reducing the daily administration frequency of oral antihyperglycemic agents improves compliance with treatment and consequently metabolic control and quality of life. **CONCLUSIONS:** MR gliclazide leads to better compliance for patients in working age. Optimization of treatment through a reduction in the frequency of antihyperglycemic administration could be a valuable weapon in the battle to improve health outcomes and reduce the burden of type 2 diabetes.

PDB68

ASSESSING PATIENT PREFERENCE FOR INSULIN INTENSIFICATION IN FRANCE

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OBJECTIVES: The progressive nature of Type 2 diabetes mellitus (T2DM) requires periodic intensification of therapy to maintain optimal glycaemic control. Patient perception and apprehension can limit treatment success. This study aimed to evaluate attitudes of patients in France towards intensification strategies and determine reasons for hesitation when switching from basal to basal-bolus or pre-mix insulin. **METHODS:** Participants were recruited through a representative insulin-treated T2DM panel in France. Data collected using an electronic web-based questionnaire included demographics, current regimen and preference/perceptions on intensification. Data analysis was conducted in SAS. **RESULTS:** Mean demographics for the 302 recruited patients included age of 50 years, body mass index of 29kg/m², and 6 years duration of insulin treatment. A total of 137 (45%) used basal insulin only, 71 (24%) short-acting only (bolus), 73 (24%) basal-bolus, 16 (5%) pre-mix, and 5 (2%) other regimens. 89% of all respondents tested their blood glucose ≤ 4 times daily. Of those on basal-only 31% (42/137) had tried other regimens: 33% (14/42) basal-bolus and 43% (18/42) pre-mix. Reasons for reverting to basal-only included: weight gain (7% basal-bolus; 44% pre-mix); too many injections (7%, 39%); increased risk of hypoglycaemia (14%, 11%) with 43% switching from basal-bolus due to dosing complexity. 58% of respondents on basal-only insulin would hesitate to an extent if asked by their health care professional to add bolus insulin or switch to pre-mix insulin; 30% were unsure. Reasons for hesitation included: more daily injections (42%), injection associated pain/discomfort (27%), risk of hypoglycaemic events (23%), weight gain (30%), difficulty in determining the correct dose related to food (34%), and the inconvenience of timing (15%). **CONCLUSIONS:** Patient barriers may exist due to associated adverse outcomes, triggering treatment-intensification inertia and leaving many patients under poor glycaemic control. New strategies requiring fewer injections and with less hypoglycaemia could offer a suitable alternative.

PDB69

PATIENT-REPORTED NEED VS. CONCERN AROUND INJECTABLE THERAPY AND IMPACT ON ADHERENCE: A REAL-WORLD SURVEY OF 5EU/US T2DM PATIENTS

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OBJECTIVES: Diabetes patients transitioning to insulin use can often have concerns about weight gain, hypoglycaemic episodes, needle phobias/reactions and fears of advancing disease. This analysis explores T2DM patients on injectable therapies with/without oral anti-diabetics, their needs versus concerns around injecting, impact on compliance and associated characteristics. **METHODS:** Data were drawn from the 2015 Adelphi T2DM Disease Specific Programme, a real-world, cross-sectional survey involving diabetes specialists, primary care physicians, each providing demographic/clinical data for 10 consecutive consulting T2DM patients. Same patients report adherence (Morisky Measurement Adherence Scale, MMAS-8), feelings around injecting (understanding the need where 1=I do not understand the need versus concerns around injecting where 1=I am very concerned; both 7-point scales). Analysis focused on patients receiving GLP-1 and/or insulin. All results

$p < 0.05$. **RESULTS:** A total of 209 specialists and 198 GPs completed questionnaires for 3585 T2DM patients currently receiving insulin and/or GLP-1 therapy, who also provided patient-reported questionnaires. Patients were classified into 4 quadrants based on their perceived need versus concern around injectables: low concern/low need (LCLN) 11%, low concern/high need (LCHN) 72%, high concern/low need (HCLN) 7%, high concern/high need (HCHN) 9%. Compared to the other 3 quadrants, HCLN patients were most likely to be female (49%), worst HbA1c (8.4%), most comorbidities (4.3), physician-reported very high cardiovascular risk (12%) and highest pill burden (8.8). Both needs and concerns with injectables are significant predictors of adherence; HCLN drives worst adherence (4.5-5), HCHN and LCLN drive higher adherence (5-6) and LCHN drives best adherence (6.5-7). **CONCLUSIONS:** Patient-reported needs versus concerns towards injectable therapy influence adherence. Patients with HCLN towards injectables appear least adherent with poor HbA1c, highest CV-risk and pill burden, suggesting they do not understand their high clinical need. Such lack of patient understanding coupled with high concerns warrants attention.

PDB70

THE REAL-LIFE EFFECTIVENESS AND CARE PATTERNS OF DIABETES MANAGEMENT STUDY FOR GREECE. "RECAP-DM"

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OBJECTIVES: To evaluate the prevalence of hypoglycemia and its association with patient reported outcomes (PROs), as well as to assess the proportion of patients at the HbA1c goal of $< 7.00\%$. **METHODS:** This observational, cross-sectional, multi-center study was conducted in Greece from April 2015 to October 2015. All patients were treated with sulfonylureas (SUs) as monotherapy or in combination with metformin. Questionnaires were used to ascertain patients' reports of hypoglycemic symptoms, treatment satisfaction (TSQM), treatment adherence (Adherence and Barriers Questionnaire), fear of hypoglycemia (HFS-II) and quality of life (EQ-5D-3L). Glycemic control was based on documented HbA1c measurements at enrolment visit. **RESULTS:** 383 patients were recruited. The mean (\pm standard deviation) age was 68.4 ± 11.4 years, and the mean duration of type 2 diabetes mellitus (T2DM) was 10.3 ± 7.3 years. The mean HbA1c level was $7.22\% \pm 1.05\%$, while 42.00% and 18.80% of patients were below HbA1c goals of $< 7.00\%$ and $< 6.50\%$ respectively. 43.1% of patients reported hypoglycemic symptoms during the last six months prior to enrolment had lower quality of life ($p = 0.064$), lower treatment satisfaction score in all TSQM domains (convenience $p < 0.0001$, effectiveness $p = 0.008$, side effects $p = 0.005$ and overall satisfaction $p < 0.0001$), had increased fear of hypoglycemia than their counterparts ($p < 0.0001$), and were also more likely to report barriers to adherence (4 out of 5 domains) including being unsure about instructions (35.3% vs. 39.4% respectively; $p = 0.012$). In addition, hypoglycemia severity was associated with all PROs. Finally, hypoglycemia was not related to glycemic control on enrollment ($p = 0.622$) but severity was ($p = 0.013$). **CONCLUSIONS:** Overall, symptoms of hypoglycemia were reported by 43% of patients with T2DM treated with SUs in Greece. Based on study findings, decreasing the incidence and severity of hypoglycemia may help improve PROs and adherence, which in turn might result in better glycemic control and overall health outcomes.

PDB71

TIMING OF INSULIN INJECTIONS PREDICTS TYPE 2 DIABETES CONTROL AND ADHERENCE IN A MULTINATIONAL SAMPLE

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OBJECTIVES: Diabetes guidelines recommend administration of bolus insulin within 30 minutes prior to mealtimes. However, lifestyle or eating habits may result in dosing outside of this period and poorer glycemic control, but few studies have explored this topic. Hence we investigated the association of timing of bolus insulin injection with glycemic control and adherence among type 2 diabetes mellitus (T2DM). **METHODS:** Adults with T2DM were recruited to a self-reported online patient preference survey in 12 countries across North America, South America and Europe. Adherence was measured using an adapted Morisky Medication Adherence Scale (MMAS-8) questionnaire. **RESULTS:** In total 1,509 respondents reported using bolus insulin. Whilst the majority (864, 57%) always dosed bolus insulin before meals (pre-meal cohort), 354 (23%) always dosed during or after meals (post-meal cohort), and 265 (18%) dosed before, during or after meals (mixed cohort); 26 (2%) reported dosing at "other" times, and were excluded. The post-meal cohort was significantly younger and more likely to be degree-educated (both $p < 0.0001$) and had a higher proportion (40%) with HbA1c $\geq 9\%$, compared to pre-meal (29%) and mixed cohorts (28%) (both $p < 0.0005$). From the adapted MMAS-8, 'forgetting to administer' or 'having difficulty remembering to take all insulin' was more likely in the post-meal and mixed cohorts versus the pre-meal cohort (all $p < 0.05$). 78% of respondents reported preferring bolus insulin that can be administered whenever convenient: before, during or after meals. **CONCLUSIONS:** When dosing bolus insulin, approximately 40% of patients fail to comply with guidelines for timing either all or part of the time, with higher risk of forgetting to take insulin. Patients dosing insulin post-meal are more likely to be younger and more educated, and have poor glycemic control (HbA1c $\geq 9\%$). Patient preference for bolus insulin with flexibility of dosing times should be considered in order to improve adherence and outcomes.

PDB72

PHASE III TRIAL OF RECOMBINANT HUMAN PARATHYROID HORMONE IN HYPOPARATHYROIDISM: A POST-HOC ANALYSIS OF CHANGE IN HEALTH-STATE UTILITY AMONG RESPONDERS